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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NPS/P104214WO	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/GB2004/004716	International filing date (day/month/year) 09.11.2004	Priority date (day/month/year) 10.11.2003
International Patent Classification (IPC) or national classification and IPC B63B27/14, B63B27/18		
Applicant THE ENGINEERING BUSINESS LIMITED et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 9 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 09.09.2005	Date of completion of this report 25.11.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Moya, E Telephone No. +49 89 2399-2871 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/004716

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-23 as originally filed

Claims, Numbers

1-62 filed with telefax on 26.10.2005

Drawings, Sheets

1/9-9/9 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/004716

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-49, 51, 52, 54-56, 61
	No: Claims	50, 53, 57-60, 62
Inventive step (IS)	Yes: Claims	
	No: Claims	1-49, 51, 52, 54-56, 61
Industrial applicability (IA)	Yes: Claims	1-62
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Point V

1. Reference is made to the following documents:

D1: GB-A-2 225 753
D2: US-A-6 435 795
D3: US-2002/0083881
D4: US2003/0182741
D5: GB-A-2 246 992

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-49, 51, 52, 54-56 and 61 does not involve an inventive step in the sense of Article 33(3) PCT.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 50, 53, 57-60, 62 is not new in the sense of Article 33(2) PCT.

3. 3.1 Document D1 discloses a method of providing access from a first marine structure to a second marine structure, comprising providing a gangway apparatus in a stored condition on the first marine structure, positioning the first marine structure close to the second marine structure, providing at least one wire guide attached to the first marine structure, the gangway apparatus being attached or attachable to a said guide wire by means of one or more slidable fixings, extending the at least one guide wire from the first marine structure and connecting the at least one guide wire between a location on the first marine structure and an attachment location on the second marine structure proximate the location of entry to the second marine structure, maintaining at least one guide wire at a desired tension, moving the gangway apparatus from the stored condition to a use condition by sliding the slidable fixing along a said guide wire until the gangway apparatus spans the gap between the first marine structure and location of entry to the second marine structure.

In the method of claim 1 the two marine structures are positioned at fixed distance

with a permanent connection and is intended for crew rescue in case of distress of the larger structure. The problem posed is that it is not possible to use the gangway system for a customary crew transfer to a shuttle vessel which is not permanently fixed to the larger structure.

The subject matter of claim 1 differs therefrom in that one of the marine structures is a vessel navigable under its own power that manoeuvres so that it comes proximate to the other marine structure and in that it controls or adjusts the position so that it maintains a spaced apart relation to the fixed marine structure. This differing feature intends to solve the posed problem.

However the use of vessels that are navigable under their own power, that are able to manoeuvre close to a larger offshore structure and that can control their relative position is widely known in the art as can be seen in documents D3 and D4. Those documents show the provision of adaptive means that together with the vessel propulsion plant can manoeuvre and get proximate to another structure. The skilled man would turn to any of those documents when trying to solve the problem posed, and thus would arrive to the subject matter of claim 1 without the use of an inventive step.

Article 33 (3) PCT is not met.

3.2 The subject matter of dependent claims 2- 6 are derivable from the combination of D1/D3 or D4.

4. 4.1 Document D1 discloses an apparatus for providing a permanent bridge structure (20) for the transfer of personnel, goods or equipment from a first marine structure (10) to a second marine structure (22) comprising at least one inflatable member (46, 47) which is transformable from a compact state to an extended state by inflation thereof, attachment means for attaching the apparatus to said vessel, means for inflating the inflatable member, at least one guide wire (42, 43) and means for attaching the guide wire to the said vessel, the guide wire being operatively extendable from the said marine structure to the second marine structure, guide wire attachment means by which the at least one guide wire is operatively releasable

attachable to an attachment location on the second marine structure proximate the location of entry (41) to the second marine structure, means mounted in use on the said vessel for maintaining a desired tension in the at least one guide wire, a plurality of slidable fixings along a said guide wire (42) on inflation of the at least one inflatable member, by means of which fixings the at least one inflatable member is operatively suspendible from the at least one guide wire.

The subject matter of claim 1 differs therefrom in that the bridge structure is a temporary relocatable structure and in that one of the marine structures is a vessel navigable under its own power.

Documents D3 and D4 disclose the differing features; having regard the same arguments given above for claim 1, the subject matter of claim 7 is not inventive, Art. 33 (3) PCT.

4.2 The combination of D1 and D3/D4 discloses the features of dependent claims 9-11, 13, 16, 18-25, 27-29, 32-36 and 38-48. The subject matter of dependent claims 8, 12, 14, 15, 17, 26, 30, 31, 37 and 49 are merely some of the several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

Art. 33 (3) PCT is not met with regard to those claims.

5. 5.1 Document D1 discloses an apparatus for providing a bridge structure (20) for the transfer of personnel from a first marine structure (10) to a second marine structure (22), the apparatus comprising a bridge member operatively moveable from a stored condition to a use condition, a runway (18) operatively mounted on the first marine structure (10) and on which the bridge member (20) is mounted in its stored condition, at least one guide wire (42) and means for attaching the guide wire to the first marine structure, the guide wire being extendable from the first marine structure and attachable to an attachment location on the second marine structure (22) proximate the location of entry (41) to the second marine structure (22) means mounted in use on the first marine structure (10) for maintaining a desired tension in

the at least one guide wire, one or more first slidable fixings attached to said bridge member by means of which the bridge member is slidable along the runaway (18) from the stored condition to, or towards, the use condition, one or more second slidable fixings (at 43) attached to the bridge member and slidable along a said guide wire (43) on deployment of the bridge member (20), by means of which the bridge member is operatively suspendible from the at least one guide wire to span the gap between the first (10) and second (22) marine structures.

The subject matter of claim 50 does not comply with the requirements of novelty of Art. 33 (2) PCT.

5.2 The same document discloses the subject matter of claims 53, 57-60 and 62. Article 33 (2) PCT is not met.

5.3 The features of dependent claims 51, 52, 54, 55, 56 and 61 are merely several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed. Article 33 (3) PCT is not met.

Point VII

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is/are this/these document identified therein.
2. Independent claims 7 and 50 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Point VIII

1. Although claims 7 and 50 have been filed as separate independent claims, they

appear to relate effectively to the same subject matter and to differ from each other only with regard to the definition of the subject matter for which protection is sought. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Art. 6 PCT.

2. There is a large number of dependent claims that appear to refer to the same subject matter or that are drafted in reference to the drawings in the application. Article 6 PCT is not met.

Claims

1. A method of providing access from a first marine structure comprising a vessel navigable under its own power to a second marine structure, comprising:
 - 5 providing a gangway apparatus in a stored condition on the first marine structure;
 - manoeuvring the first marine structure so that it is proximate the second marine structure;
 - providing at least one guide wire attached to the first marine structure, the
 - 10 gangway apparatus being attached or attachable to a said guide wire by means of one or more slidable fixings;
 - extending the at least one guide wire from the first marine structure and connecting the at least one guide wire between a location on the first marine structure and an attachment location on the second marine structure proximate
 - 15 the location of entry to the second marine structure;
 - controlling and, where necessary, adjusting the position of the first marine structure so that it is maintained in spaced apart relation to the second marine structure, and maintaining the at least one guide wire at a desired tension;
 - moving the gangway apparatus from the stored condition to a use condition by
 - 20 sliding the slidable fixing(s) along a said guide wire until the gangway apparatus spans the gap between the first marine structure and location of entry to the second marine structure.
2. A method as claimed in claim 1 wherein the gangway apparatus comprises at
- 25 least one inflatable member attached to a said guide wire by said slidable fixings and transformable by inflation thereof from a compact state to an extended state, the method further comprising inflating the inflatable member with an inflating fluid thereby to cause the slidable fixings to slide along the guide wire as the inflatable member expands until the gangway apparatus spans the gap
- 30 between the first marine structure and location of entry to the second marine structure.

3. A method as claimed in claim 2 comprising:

P104214WO amend 26-10-05

providing two guide wires and connecting said guide wires between a location on the first marine structure and points on the second marine structure proximate the location of entry to the second marine structure.

5 4. A method as claimed in claim 3 comprising providing a single inflatable member with a guide wire at respective sides thereof.

5. A method as claimed in any preceding claim wherein the second marine structure is a fixed structure.

10

6. A method as claimed in any of claims 1 to 4 wherein the second marine structure is a vessel.

15

7. Apparatus for providing a temporary relocateable bridge structure for the transfer of personnel, goods or equipment from a first marine structure comprising a vessel navigable under its own power to a second marine structure comprising:

at least one inflatable member which is transformable from a compact state to an extended state by inflation thereof;

20

attachment means for attaching the apparatus to the said vessel;

means for inflating the inflatable member;

at least one guide wire and means for attaching the guide wire to the said vessel, the guide wire being operatively extendable from the said vessel and to said second marine structure;

25

guide wire attachment means by which the at least one guide wire is operatively releasably attachable to an attachment location on the second marine structure proximate the location of entry to the second marine structure;

means mounted in use on the said vessel for maintaining a desired tension in the at least one guide wire;

30

a plurality of slidable fixings slidable along a said guide wire on inflation of the at least one inflatable member, by means of which fixings the at least one inflatable member is operatively suspendable from the at least one guide wire.

8. Apparatus as claimed in claim 7 comprising a single inflatable member.
9. Apparatus as claimed in claim 7 comprising a plurality of inflatable members which are independently inflatable.
- 5 10. Apparatus as claimed in claim 9 comprising at least one inflatable member which, in its expanded state, has an upper surface which operatively forms a walkway for personnel using the bridge structure.
- 10 11. Apparatus as claimed in claim 10 comprising means for joining two or more inflatable members together to form said walkway.
12. Apparatus as claimed in claim 11 wherein said two or more inflatable members are joined in side-by-side relation.
- 15 13. Apparatus as claimed in claim 9, 10, 11 or 12 further comprising inflatable members defining in their expanded state side walls of the bridge structure.
14. Apparatus as claimed in claim 13 comprising means for joining two or more inflatable members together to form said side walls.
- 20 15. Apparatus as claimed in claim 14 wherein said two or more inflatable members are joined in side-by-side relation.
- 25 16. Apparatus as claimed in claim 8 wherein an upper surface said inflatable member operatively forms a walkway for personnel using the bridge structure.
17. Apparatus as claimed in claim 16 wherein said upper surface includes a non-slip surface.
- 30 18. Apparatus as claimed in claim 8 or 16 or 17 further comprising a plurality of upright posts attached at intervals to said inflatable member and safety ropes or nets attached to said posts.

19. Apparatus as claimed in any of claims 7 to 18 further comprising at least one safety rope extending lengthwise of the bridge to which a user's safety harness is operatively attachable.
- 5
20. Apparatus as claimed in any of claims 7 to 19 wherein the at least one inflatable member is, in its expanded state, operatively suspended below a single guide wire.
- 10
21. Apparatus as claimed in any of claims 7 to 19 wherein the at least one inflatable member is, in its expanded state, operatively suspended between a pair of substantially parallel guide wires.
- 15
22. Apparatus as claimed in any of claims 7 to 21 wherein the second marine structure is a fixed structure.
23. Apparatus as claimed in any of claims 7 to 21 wherein the second marine structure is a second vessel.
- 20
24. Apparatus as claimed in any of claims 7 to 23 for carrying out the method of any of claims 2 to 6.
- 25
25. A transfer vessel having mounted thereon apparatus as claimed in any of claims 7 to 21.
26. A transfer vessel as claimed in claim 25 comprising an inflatable boat, in particular an RIB.
- 30
27. Mounting structure for mounting an apparatus as claimed in any of claims 7 to 23 on a vessel, comprising at least one of:
- i) means for accommodating rotational movement of the vessel with respect to the apparatus;

- ii) means for accommodating translational movement of the vessel with respect to the apparatus; and
- iii) means for accommodating pitching movement of the vessel with respect to the apparatus.

5

28. Mounting structure for mounting an apparatus as claimed in any of claims 7 to 23 on a vessel comprising:

a first mounting component mounted in rotationally fixed relation to the vessel
a second mounting component mounted on the first mounting component and
attached in rotationally fixed relation to the apparatus, the first and second
mounting components being rotatable with respect to one another.

10

29. A mounting structure as claimed in claim 28 wherein the first and second components define a slew ring bearing.

15

30. A mounting structure as claimed in claim 28 or 29 further comprising a first frame element disposed between the second component and the apparatus and mounted with translational freedom of movement with respect to the second mounting component.

20

31. A mounting structure as claimed in claim 30 further comprising biasing means adapted to bias the first frame element towards a desired location in its translational motion.

25

32. A mounting structure as claimed in any of claims 28 to 31 further comprising a second frame element pivotally mounted with respect to the second mounting component operatively attached to the apparatus, wherein the second frame element operatively pivots about a nominally horizontal axis substantially perpendicular to the longitudinal axis of the at least one inflatable member when extended.

30

33. A mounting structure as claimed in claim 32 wherein the second frame element is pivotally mounted on the first frame element.

34. A transfer system comprising a mounting structure as claimed in any of claims 28 to 33 and an apparatus as claimed in any of claims 7 to 23 attached thereto.
- 5 35. A transfer vessel having mounted thereon a mounting structure as claimed in any of claims 28 to 33.
36. A transfer vessel having mounted thereon a transfer system as claimed in claim 34.
- 10 37. A transfer vessel as claimed in claim 36 comprising an inflatable boat, in particular an RIB.
- 15 38. Apparatus substantially as hereinbefore described with reference to any of Figures 1 to 10.
39. Mounting structure substantially as hereinbefore described with reference to any of Figures 5 to 10.
- 20 40. A method substantially as hereinbefore described with reference to any of Figures 1 to 20.
41. A transfer vessel having mounted thereon apparatus as claimed in claim 38.
- 25 42. A transfer vessel having mounted thereon a mounting structure as claimed in claim 39.
43. A transfer system comprising a mounting structure as claimed in claim 39 and an apparatus as claimed in claim 38 attached thereto.
- 30 44. A transfer vessel having mounted thereon a transfer system as claimed in claim 43.

45. A method as claimed in claim 1 further comprising:

providing the first marine structure with a runway and mounting the gangway apparatus on the runway in its stored condition and, when the gangway apparatus is required for use, sliding the gangway apparatus along the runway.

5

46. A method as claimed in claim 45 wherein the gangway apparatus slides along the runway contemporaneously with the step of sliding the gangway apparatus along the guide wire(s).

10 47. A method as claimed in claim 45 or 46 wherein at least one end portion of the gangway apparatus remains connected to the runway when the gangway apparatus is in its use condition.

15 48. A method as claimed in any of claims 45 to 47 wherein the first marine structure is a transfer vessel and the second marine structure is a fixed structure.

49. A method as claimed in any of claims 45 to 47 wherein the first and second marine structures are vessels.

20 50. Apparatus for providing a bridge structure for the transfer of personnel from a first marine structure to a second marine structure, the apparatus comprising:
a bridge member operatively moveable from a stored condition to a use condition;
a runway operatively mounted on the first marine structure and on which the
25 bridge member is mounted in its stored condition;
at least one guide wire and means for attaching the guide wire to the first marine structure, the guide wire being extendable from the first marine structure and attachable to an attachment location on the second marine structure proximate the location of entry to the second marine structure;
30 means mounted in use on the first marine structure for maintaining a desired tension in the at least one guide wire;

one or more first slidable fixings attached to said bridge member by means of which the bridge member is slidable along the runway from the stored condition to, or towards, the use condition;

5 one or more second slidable fixings attached to the bridge member and slidable along a said guide wire on deployment of the bridge member, by means of which fixings the bridge member is operatively suspendable from the at least one guide wire to span the gap between the first and second marine structures.

10 51. Apparatus as claimed in claim 50 wherein the runway comprises at least one rigid rail.

52. Apparatus as claimed in claim 51 wherein the or each rail is rectilinear.

15 53. Apparatus as claimed in claim 50 wherein the runway comprises one or more tensioned cables.

20 54. Apparatus as claimed in any of claims 50 to 53 wherein the first marine structure is a transfer vessel and the second marine structure is a fixed structure.

55. Apparatus as claimed in claim 54 wherein the runway is mounted in use to extend from a highest point towards a central region of the vessel to a lowest point near the stern of the vessel.

25 56. Apparatus as claimed in any of claims 50 to 53 wherein the first and second marine structures are vessels.

30 57. Apparatus as claimed in any of claims 50 to 56 wherein at least an end portion of the bridge member remains attached to the runway in the use condition.

58. Apparatus as claimed in any of claims 50 to 57 wherein the bridge member includes at least one inflatable member whereby the bridge member is

transformable between contracted and expanded conditions by deflation and inflation of the inflatable member.

59. Apparatus as claimed in any of claims 50 to 58 for carrying out the method of
5 any of claims 45 to 49.

60. A transfer vessel having mounted thereon apparatus as claimed in any of claims 50 to 55 or any of claims 57 or 58 when dependent on claim 54.

10 61. A transfer vessel as claimed in claim 60 comprising an inflatable boat, in particular an RIB.

62. Apparatus substantially as hereinbefore described with reference to any of Figures 11 to 20.